

REMARKS

Claims 1-13 are pending in this patent application. By the amendment, claim 1-13 have been amended. Reconsideration of this patent application, as amended, is respectfully requested.

Amendment to Title

The title of the invention has been amended to be "Surgical Assembly having Guide Block."

Amendment to Drawing

Please amend FIG. 1 to include a blade of a surgical tool shown extending through the slot 10 of the guide part 6 as shown in the Annotated Sheet attached hereto. A replacement sheet showing the amendment included therein is also attached hereto as Replacement Sheet. Support for this amendment can be found in the originally filed patent application at, among other locations, paragraphs [0026], [0020], [0009], and [0008], as well as claims 6 and 7. (See Pat. App. Pub. No. 2006/0155291.)

Amendment to Specification

Paragraph [0026] of the specification identified in the published patent application (see Pat. App. Pub. No. 2006/0155291) has been amended to include a discussion consistent with the amendment to the drawings.

First 35 U.S.C. § 103 Rejection

Claims 1-9 were rejected under 35 U.S.C. § 103 as being unpatentable over by Millard (U.S. Patent No. 6,712,824) in view of Muller (U.S. Publication No. 2001/0018589). Claims 1-9 have been amended to more clearly define the invention. Applicants respectfully request reconsideration of amended claims 1-9.

Discussion re: Patentability of Amended Claim 1

Amendment to Claim 1

Claim 1 has been amended to clarify that the guide part includes *a tool engagement guide surface*, and that *a bone contacting cutting surface* of a surgical tool is positioned in engagement with the tool engagement guide surface. Note, according to the invention of amended claim 1, the surgical tool is *not* part of a totally automated cutting system. Rather, the only part that is manipulated by the drives is the guide part that carries the tool engagement guide surface. Traditional surgical tools may then be used to perform highly accurate bone resection utilizing the tool engagement guide surface. This represents a fundamentally different approach in comparison to the prior art.

Further Discussion

Presumably, in an attempt to arrive at the invention of Applicants' amended claim 1, the Office Action states that "[i]t would have been obvious to one having ordinary skill in the art ... to manufacture the device of Millard further comprising a signal generator coupled to the drives in view of Muller" (See Office Action at page 3, second to last

line through page 4, line 2.) And further the Office Action states this would have been obvious "in order to automatically adjust the guide part." (See Office Action at page 4, line 2.)

Muller teaches a milling cutter 1 having a rotating milling head 2 as shown in Muller's figure 1. The milling cutter 1 is configured to prepare a surface of a femur or tibia by cutting or milling bone portions therefrom. A positioning system is attached to the milling cutter 1 so as to advance the milling cutter 1 during a cutting or milling operation on bone. In particular, the milling cutter 1 is moved in relation to a bone so that the rotating milling head 2 is advanced in a milling plane to cut or mill a surface of the bone. Muller mentions that the motion of the milling head in the milling plane can be carried out by use servo motors, the triggering of the servo motors being controlled by a computer. (See Muller at paragraph [0018].)

It would not have been reasonably obvious to one skilled in the art in view of Muller to modify the Millard system so that its positioning apparatus P includes *a signal generator which is connected to the drives and configured to generate position signals which are transmitted to the drives to cause the guide part to be moved relative to the fixation part ...*, and where the guide part has *at least one tool engagement guide surface, that is positioned in engagement with ... a bone contacting cutting structure of a surgical tool* as called for in amended claim 1. Significantly, the context in which the servo features are contemplated in the Muller reference is very different from that in the Millard system. Indeed, the servo features in Muller are contemplated to control motion of the cutting instrument during a cutting step of preparing bone to receive an implant. In other words, it is the movement of the cutting instrument itself which is being controlled.

In contrast, the Millard reference is concerned with a very different approach to preparing bone. The Millard reference involves fastening a cutting guide in fixed relation to a bone. This then allows a traditional cutting instrument (such as a bone saw) to be manipulated during a cutting operation to cut bone, with the position of the cutting instrument being controlled manually with reference to the fixed cutting guide.

One skilled in the art seeking to automate control of the movement of the cutting instrument would learn from the Muller document to incorporate position monitoring and servo features into the cutting instrument itself. Indeed, this is the entire thrust of the teaching contained in the Muller document. The Muller document actually teaches away from the use of a cutting guide as provided in the invention of amended claim 1.

In view of the above, it would not have been reasonably obvious to one skilled in the art in view of Muller to modify the Millard system so that its positioning apparatus P includes *a signal generator which is connected to the drives and configured to generate position signals which are transmitted to the drives to cause the guide part to be moved relative to the fixation part ...*, and where the guide part has *at least one tool engagement guide surface, that is positioned in engagement with ... a bone contacting cutting structure of a surgical tool* as called for in amended claim 1. As a result, the proposed combination of Millard in view of Muller does not establish a prima facie case of obviousness under 35 U.S.C. § 103 with regard to the invention of amended claim 1.

Further, it should be noted that the Muller document does not provide any teaching as to how the servo motor features could be incorporated into a guide block system. This is, of course, because the Muller reference is not actually concerned with a surgical technique which involves the use of guide blocks.

It is significant to note that, to the best of the Applicants knowledge, guide blocks for use in orthopaedic surgery have not previously made use of drives which can be actuated using signals which are generated by means of a position monitor and associated signal generator. The approach according to the invention defined in amended claim 1 represents a significant departure from existing guide block techniques.

Discussion re: Patentability of Claims 2-9

Each of claims 2-9 depends directly or indirectly from amended claim 1. As a result, each of claims 2-9 is allowable for, at least, the reasons hereinbefore discussed with regard to amended claim 1.

Second 35 U.S.C. § 103 Rejection

Claims 1, 2, 4-6, and 8-13 were rejected under 35 U.S.C. § 103 as being unpatentable over Pohl (U.S. Patent No. 4,703,751) in view of Millard (U.S. Patent No. 6,712,824), and further in view of Muller (U.S. Publication No. 2001/0018589). Claims 1, 2, 4-6, and 8-13 have been amended. Applicants respectfully request reconsideration of amended claims 1, 2, 4-6, and 8-13.

Discussion re: Patentability of Amended Claim 1

In an attempt to arrive at the invention of Applicants' amended claim 1, the Office Action states that "[i]t would have been obvious to one having ordinary skill in the art ...

to manufacture the device of Pohl further comprising ... a signal generator [coupled to the drives] in view of Muller" (See Office Action at page 6, lines 6-9.) And further the Office Action states this would have been obvious "in order to automatically adjust the guide part." (See Office Action at page 6, lines 9-10.)

As properly pointed out by the Office Action (at page 5, lines 17-21), Pohl fails to disclose a device that includes a signal generator coupled to the drives capable of generating position signals transmitted to the drives to adjust the guide part. The Office Action (at page 3, lines 17-19) also acknowledges that the Millard reference fails to teach this feature. As discussed above, Muller teaches using servo motors to control motion of a cutting instrument during a cutting step of preparing bone to receive an implant.

It would not have been reasonably obvious to one skilled in the art in view of Muller to modify the Pohl device (having the position indicator of Millard) so that its positioning apparatus 10 includes *a signal generator which is connected to the drives and configured to generate position signals which are transmitted to the drives to cause the guide part to be moved relative to the fixation part ..., and where the guide part has at least one tool engagement guide surface, that is positioned in engagement with ... a bone contacting cutting structure of a surgical tool* as called for in amended claim 1. As was true with Millard, the context in which the servo features are contemplated in the Muller reference is very different from that in the Pohl system. As discussed above, the servo features in Muller are contemplated to control motion of the cutting instrument during a cutting step of preparing bone to receive an implant. In contrast, the Pohl reference is concerned with a very different approach to preparing bone. The Pohl reference involves fastening a cutting guide in fixed relation to a bone. This then allows a traditional cutting

instrument (such as a bone saw) to be manipulated during a cutting operation to cut bone, with the position of the cutting instrument being controlled manually with reference to the fixed cutting guide.

Again, one skilled in the art seeking to automate control of the movement of the cutting instrument would learn from the Muller document to incorporate position monitoring and servo features into the cutting instrument itself.

In view of the above, it would not have been reasonably obvious to one skilled in the art in view of Muller to modify the Pohl system (having the position indicator of Millard) so that its positioning apparatus 10 includes *a signal generator which is connected to the drives and configured to generate position signals which are transmitted to the drives to cause the guide part to be moved relative to the fixation part ...*, and where the guide part has *at least one tool engagement guide surface, that is positioned in engagement with ... a bone contacting cutting structure of a surgical tool* as called for in amended claim 1. As a result, the proposed combination of Pohl in view of Millard, and further in view of Muller, does not establish a prima facie case of obviousness under 35 U.S.C. § 103 with regard to the invention of amended claim 1.

Discussion re: Patentability of Claims 2, 4-6, and 8-13

Each of claims 2, 4-6, and 8-13 depends directly or indirectly from amended claim 1. As a result, each of claims 2, 4-6, and 8-13 is allowable for, at least, the reasons hereinbefore discussed with regard to amended claim 1.

Comment to Examiner's Response to Arguments

The Examiner provided a response to Applicants' arguments set forth in their Response to Office Action filed 2/19/09 (see Office Action at page 6, line 10 through page 7, line 8). In this Office Action passage, it is suggested that Muller at paragraph [0018] makes reference to "guides" that are manipulated by servo motors. Muller's paragraph [0018] mentions "setting equipments", and in particular states "actuation ... by servo motor can be provided for, the setting equipments and/or motion of the milling head in the milling plane" The setting equipments to which Muller refers in its paragraph [0018] appears to be at least some of the following components: the setting block 18 (see Muller at paragraph [0034]), the disc cam 15 (see Muller at paragraph [0034]), the set screw 31 and the dovetail guide 32 (see Muller at paragraph [0034]). These components which Muller appears to call "setting equipments" are fundamentally different from the claimed *guide part* which has *at least one tool engagement guide surface*, that is *positioned in engagement with ... a bone contacting cutting structure of a surgical tool* as called for in Applicants' amended claim 1. Indeed, Muller's setting equipments appears to be utilized to position a milling cutter in an entirely automated cutting system. In contrast, Applicants' invention is concerned with a very different approach to preparing bone. The invention of Applicants' amended claim 1 involves fastening a fixation part directly to a bone. This then allows a traditional cutting instrument (such as a bone saw) to be manipulated during a cutting operation to cut bone, with the position of the blade of the bone saw being accurately located with reference to a guide surface of a guide part that is adjusted by drives in relation to the fixation part. Applicants' invention possesses substantial advantages over the prior art such as Muller

such as being less complex and less expensive in relation to prior art devices such as Muller.

Conclusion

In view of the foregoing amendments and remarks, it is submitted that this application is in condition for allowance. Action to that end is hereby solicited. It is respectfully submitted that, if necessary for a timely response, this paper be considered as a Petition for an Extension of Time sufficient to effect a timely response, and any deficiency in fees be charged, or any overpayment in fees be credited, to our Deposit Account No. 13-0014.

Respectfully submitted,

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ANNOTATED SHEET

